Global Ocean Observing System (GOOS)

GOOS is an internationally coordinated system for systematic operational data collection, data analysis, exchange of data and data products, and technology development and transfer. The objective of GOOS is to ensure the establishment of a permanent system of global and systematic observations adequate for forecasting climate variability and change; for assessing the health or the state of the marine environment and its resources, including the coastal zone; and for supporting an improved decision-making and management process, which takes into account potential natural and man-made changes in the environment and their effects on human health and marine resources. GOOS is coordinated by the Intergovernmental Oceanographic Commission (IOC) headquartered in Paris, France. GOOS planning and operations are guided by the Framework for Ocean Observing (http://www.oceanobs09.net/foo/index.php

GOOS is sponsored by the Intergovernmental Oceanic Commission (IOC), the UN Environment Programme (UNEP), The World Meteorological Organization (WMO), and the International Council for Science (ICSU).

GOOS is implemented by member states via their government agencies, navies and oceanographic research institutions working together in a wide range of thematic panels and regional alliances.

GOOS is an ocean component of the Global Climate Observing System (GCOS). Status of GCOS climate components are assessed regularly in the GCOS Implementation Plan and against Joint World Meteorological Organization (WMO)-IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM) targets.

The United States contribution to GOOS is the U.S. Integrated Ocean Observing System (IOOS®). Within NOAA, the Oceanic Atmosphere Research (OAR) Climate Program Office's Climate Observation Division is the Program Manager for many in situ components of global US IOOS. The United States contributes resources for ~50% of the global arrays in GOOS. The U.S. coastal component of US IOOS is comprised of, 11 Regional Coastal Ocean Observing Systems (RCCOOS), and a National consortium for sensor verification and validation – the Alliance for Coastal Technologies (ACT). Remote sensing under NASA is also a contribution to GOOS and part of U.S. IOOS. Web address: http://www.ioos.noaa.gov

GOOS comprises many observation platforms:

- Argo floats which collect high-quality temperature and salinity profiles from the upper 2000m of the ice-free global ocean and currents from intermediate depths
- Drifting buoys which record the currents of surface waters, the temperature and the atmospheric pressure
- Embarked systems on commercial or cruising yachts which collect temperature, salinity, the oxygen and carbon dioxide (CO2) in the ocean and the atmosphere, and atmospheric pressure
- Research vessels which measure all the physical, chemical, and biological parameters between the surface of the sea and the ocean floor every 30 nautical miles out of 25 transoceanic lines
- Marigraphs and holographs which transmit information in quasi real time, thus providing the possibility of detecting tsunamis
- Commercial ships which launch probes measuring the temperature and salinity between in the upper ocean on their transoceanic ways
- Moorings in open sea which are used as long-term observatories, recording weather, chemical and biological parameters on a fixed site between the surface and the bottom
- Satellite constellations which measure sea level, temperature, salinity, winds, and ocean color.

The Joint WMO - IOC Commission for Oceanography and Marine Meteorlogy (JCOMM) office in Toulouse manages deployments of the array of over 3400 Argo floats and 1250 surface drifters throughout the ocean, with IOC/UNESCO's support. More than 2000 deployments per year are required to maintain the two global arrays. Argo sampling is global and year-round. Argo's 1 millionth observation was collected in January 2013. Argo will test biology sensors in 2014.

The 6th Session of the GOOS Regional Alliance Forum was hosted by the United States and held in Waikiki, Hawaii May 14 - 16, 2013. Each GOOS Regional Alliance (GRA) completed an assessment of their capabilities and an overall summary was completed. The assessments and summary can be found at: GOOS Assessments and Summary.

A new GOOS Regional Policy was drafted and subsequently approved by the GOOS Regional Allicance Forum the IOOS in June 2013: GOOS Regional Policy

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